

HALLIBURTON

iCem® Service

NOBLE ENERGY INC-EBUS

BOOTH FEDERAL DD06-745

Production Casing

Job Date: Sunday, October 02, 2022

Sincerely,

Cody Haley

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the Booth Federal DD06-745 production casing. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Approximately 33 bbl. of spacer were returned to surface.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3932297		Quote #:		Sales Order #: 0908146062				
Customer: NOBLE ENERGY INC-EBUS					Customer Rep: Dave Nielsen					
Well Name: BOOTH FEDERAL			Well #: DD06-745			API/UWI #: 05-123-49275-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 268						
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Cody Haley					
Job										
Job depth MD		17308ft			Job Depth TVD		6673ft			
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36			0	1934	0	1934
Casing		5.5	4.892	17			0	17308	0	6673
Open Hole Section			8.5				1934	17317	1934	6673
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5	1	Citadel	17308		Bottom Plug	5.5	4	Citadel	
Float Collar	5.5	1	Citadel	17301		Centralizers	5.5	215	Citadel	

Fluid Data									
Stage #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Spacer	Tuned Prime Spacer	120	bbl	11.5	3.88	24.45	6	4245
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Cap Cement	EconoCem™	140	sack	13.2	1.57	7.99	6	1118
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Lead Cement	ElastiCem™	726	sack	13.2	1.67	8.03	8	5829
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Tail Cement	NeoCem™	1153	sack	13.2	2.04	9.79	8	11287
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Displacement	Displacement	402	bbl	8.33			10	16844
Cement Left In Pipe									
Amount	0ft	Reason						Wet shoe	
Mix Water:	pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature:			54 °F		
Plug Bumped?	Yes	Plug Displaced by:	8.33 lb/gal Treated Water	Disp. Temperature:			54 °F		
Cement Returns:	0 bbl.	Bump Pressure:	2230 psi	Floats Held?:			Yes		

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	10/2/2022	03:30:00	CALLOUT 1800 HRS ON 8/16/2022. REQUESTED ON LOCATION 0000 HRS 8/16/2022
2	Pre-Convoy Safety Meeting	10/2/2022	07:15:00	DISCUSS ROUTE AND JSA SAFE DRIVING
3	Crew Leave Yard	10/2/2022	07:30:00	CREW LEAVES YARD
4	Arrive At Loc	10/2/2022	08:30:00	MEET WITH CUSTOMER, TD 17317', 5.5" 17# P-110 CASING 17308.2', F/C 17301.2', 8.5" HOLE, SURFACE CASING 36# J-55 1934', TVD 6673', OBM 9.8 PPG, WATER TEST 54 DEGREES, PH 7, CHLORIDES LESS 200 PPM, MAX PRESSURE 3000 PSI
5	Pre-Rig Up Safety Meeting	10/2/2022	10:00:00	JSA SAFE RIG UP
6	Rig-Up Equipment	10/2/2022	10:15:00	RIG-UP ALL HES EQUIPMENT AND IRON TO BUFFER ZONE
7	Pre-Job Safety Meeting	10/2/2022	15:45:00	DISCUSS JOB PROCEDURE. DISCUSS HAZARDS OF JOB AND HES EQUIPMENT
8	Start Job	10/2/2022	16:09:26	START RECORDING DATA.
9	Drop Bottom Plug	10/2/2022	16:09:36	BOTTOM PLUG VERIFIED BY DAVE.
10	Test Lines	10/2/2022	16:13:36	TEST HES LINES TO 4650 PSI. TESTED RIGS MANUAL VALVE TO 1900 PSI.
11	Pump Spacer 1	10/2/2022	16:43:27	PUMPED 120 BBLS OF 11.5 PPG/3.88 YIELD/24.45 GAL/SACK.
12	Shutdown	10/2/2022	17:05:11	SHUTDOWN TO DROP NEXT BOTTOM PLUG.
13	Drop Bottom Plug	10/2/2022	17:07:00	BOTTOM PLUG VERIFIED BY DAVE
14	Pump Cap Cement	10/2/2022	17:11:35	PUMPED 140 SACKS/39.9 BBLS OF CAP CEMENT AT 13.2PPG/1.6 YIELD/7.99 GAL/SACK. ETOC = 931.8' PRE JOB-CALCULATIONS.

15	Other	10/2/2022	17:18:24	SHUT DOWN TO RECALIBRATE WATER KNIFE.
16	Pump Lead Cement	10/2/2022	17:20:55	PUMPED 726 SACKS/215.9 BBLS OF LEAD CEMENT AT 13.2 PPG/1.67 YIELD/8.03 GAL/SACK. ETOL= 1754.1' PRE JOB-CALCULATIONS.
17	Pump Tail Cement	10/2/2022	17:50:41	PUMPED 1153 SACKS/418.9 BBLS OF TAIL CEMENT AT 13.2PPG/2.04 YIELD/9.79 GAL/SACK. ETOT = 7049.5' PRE JOB-CALCULATIONS.
18	Shutdown	10/2/2022	18:45:17	SHUT DOWN SWAP OVER TO WASH UP PIT.
19	Clean Lines	10/2/2022	18:51:00	CLEANED PUMPS AND LINES WITH 19 BBLS OF WATER.
20	Drop Top Plug	10/2/2022	19:05:51	TOP PLUG VERIFIED BY DAVE
21	Pump Displacement	10/2/2022	19:05:55	PUMPED 3 BBLS OF GREEN DYE WATER, SHUT DOWN TOP DROP SECOND TOP PLUG THEN CONTINUED INTO A TOTAL OF 401.5 BBLS WITH 10 GALLONS OF MC MX 820-6 & 20 GALLONS OF BELLACIDE 300W THREW OUT
22	Drop Top Plug	10/2/2022	19:08:34	SECOND TOP PLUG VERIFIED BY DAVE.
23	Bump Plug	10/2/2022	19:57:49	FCP = 2230 PSI @ 2 BPM, BUMP TO 2860 PSI.
24	Check Floats	10/2/2022	20:02:00	5.5 BBLS BACK TO PUMP TRUCK FLOATS HOLD.
25	Pressure Up Well	10/2/2022	20:05:44	RUPTURE DISC ON THIRD PLUG AT 3370 PSI, PUMPED 3 BBLS.
26	Bump Plug	10/2/2022	20:14:56	FCP = 2145 PSI @ 1 BPM, BUMPED TOP PLUG AT 2600 PSI.
27	Check Floats	10/2/2022	20:19:00	5.5 BBLS BACK TO PUMP TRUCK, FLOATS HOLDING.
28	Other	10/2/2022	20:23:06	BEGIN 30 MINUTE INFLOW TEST. GAINED .5 bbl back
29	End Job	10/2/2022	20:51:31	STOP RECORDING DATA. FLUSHED RIG STACK WITH 20 BBLS OF FRESH WATER.
30	Pre-Rig Down Safety Meeting	10/2/2022	21:15:00	JSA SAFE RIG-DOWN
31	Rig-Down Equipment	10/2/2022	21:20:00	RIG-DOWN ALL HES EQUIPMENT

32	Rig-Down Completed	10/2/2022	22:00:00	RIG DOWN COMPLETED
33	Crew Leave Location	10/2/2022	22:15:00	CREW DEPARTS LOCATION

3.0 Attachments

3.1 Job Chart

